

# FOREST INSECT CONDITIONS

*in the*

## INTERMOUNTAIN & NORTHERN ROCKY MOUNTAIN STATES

### DURING 1956



INTERMOUNTAIN FOREST & RANGE EXPERIMENT STATION

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FOREST SERVICE

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FOREST INSECT CONDITIONS IN THE  
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The annual forest insect survey in the Intermountain and northern Rocky Mountain states revealed serious outbreaks in several areas during 1956. Worst of these were spruce budworm in Idaho and Montana and mountain pine beetle in Utah.

The survey program was aided greatly by cooperation of personnel in other Federal and State land managing agencies, forest industries, and interested private land owners. Entomologists of the Intermountain Forest and Range Experiment Station collected and coordinated forest insect survey information within the area. During 1956 entomologists flew for approximately 440 hours while examining damage on important forested lands. Ground surveys were performed in areas where reports and aerial observations indicated conditions that warranted further examination. Increasing cooperative interest and participation has increased the certainty of detecting abnormal insect situations. The objective is to effect sufficient coverage so that no outbreaks can develop unnoticed. While it was impossible during 1956 to survey all forested areas, the cooperative efforts made it possible to obtain a rather comprehensive picture of the forest insect situation in the Intermountain and northern Rocky Mountain states.

BARK BEETLES

Bark beetles are serious tree killers in the area and repeated outbreaks have destroyed large volumes of timber throughout the years. At the present time over-all damage is not extremely heavy, but a number of localized bark beetle outbreaks are causing some concern. Since some bark beetle damage usually becomes most evident during the year after attack, many of the trees counted during aerial surveys were actually killed in 1955. Examination on the ground provided information on current infestations in trees which had not yet faded.

A major epidemic that has persisted since 1952 in western Montana and northern Idaho appears to have returned to endemic status in 1956

with the exception of a few scattered active centers on the Lolo and Kootenai National Forests. An intensified logging program supplemented by trap logs has been in force during the epidemic to reduce the infestation. While the present situation is favorable, additional blowdown in spruce timber type during the past year constitutes an added hazard. This material may cause some buildup of beetle populations if not salvaged before the next flight season.

ENGELMANN SPRUCE BEETLE

Dendroctonus engelmanni Hopk.

In 1955 a serious outbreak of Engelmann spruce beetle involving 15,000 acres of spruce was discovered on the Bridger National Forest in Wyoming. Mortality was common when first observed and indicated that an epidemic had been developing for several years. Immediate action was taken by the Forest Service to sell and log infested spruce in the area as rapidly as possible. Prompt action resulted in considerable logging during the season of 1956. In spite of a good start with logging and limited use of trap logs, it was expected that surveys this year would show intensification and some spread. Actually surveys showed that the infestation has remained pretty well within boundaries as determined in 1955, but numbers of trees attacked have risen sharply within the area.

#### MOUNTAIN PINE BEETLE

Dendroctonus monticolae Hopk.

In the northern Rocky Mountains the mountain pine beetle is at a low level with the exception of two small centers in Glacier National Park. In the Intermountain states the beetle continues to cause serious losses on northern portions of the Ashley and Wasatch National Forests in Utah. For 5 of the last 6 years losses have approximated 100,000 trees and 1956 was no exception. The survey showed that populations are still very high and losses once again were estimated to exceed 100,000 trees.

A concentration of infested lodgepole pine was discovered in 1955 on the Teton National Forest in Wyoming. Chemical treatment of overwintering brood in 1956 reduced damage by more than 90 percent. Surveys in 1956 revealed several new centers in Grand Teton National Park, Teton National Forest in Wyoming, and on the Sawtooth National Forest in Idaho. An increase in activity was noted in white bark and limber pine bordering lodgepole stands on the Bridger National Forest in Wyoming. While none of these centers is large, the grouping of infested trees indicates the possibility of an upsurge of mountain pine beetle in the areas involved.

#### DOUGLAS-FIR BEETLE

Dendroctonus pseudotsugae Hopk.

The Douglas-fir beetle rather consistently kills excessive volumes of timber throughout the Intermountain and northern Rocky Mountain Douglas-fir stands. Surveys in the northern Rockies indicated a generally lower level of losses than were noted in the past few years. There are, however, small localized epidemic infestations. Also, severe winds during 1955 caused much windthrow in some areas, which could serve to develop large populations. Efforts are being made to locate and salvage wind-thrown trees before the beetles can build up in them. In southern Idaho

it appears that losses continued about the same level over the fir stands although considerable fluctuation was noted areawise. Considerable logging of blowdown timber was undertaken in some areas. In southern Utah activity by the Douglas-fir beetle has been increasing steadily for the past 3 years. A high percentage of the Douglas-fir stands on the Dixie National Forest have suffered severe mortality.

In recent years the southwestern pine beetle has been killing ponderosa pine at an excessive rate on the Charleston Mountain recreational area of the Nevada National Forest. Control has consisted of chemical treatment of infested trees. A maintenance system of surveys and control has been followed throughout the summer because of the presence of several broods a season. Last year approximately 500 trees were treated on 6,000 acres. During 1956, surveys revealed the need for a continuance of this method in order to prevent an upsurge of losses.

SOUTHWESTERN PINE BEETLE

Dendroctonus barberi Hopk.

The Black Hills beetle has been very active in ponderosa pine stands on the Dixie National Forest and in Bryce Canyon National Park in southern Utah since 1949. Deficient precipitation during the past 7 years has reduced tree vigor. In spite of repeated control action since 1950 new spots of infested trees have continued to appear in untreated areas. Wherever practical, logging of infested trees is employed to control infestations. The method is replaced by chemical treatment in inaccessible areas.

BLACK HILLS BEETLE

Dendroctonus ponderosae Hopk.

DEFOLIATORS

The spruce budworm outbreak in Montana and Idaho is the most extensive forest insect problem in those states. During 1956 it was determined that gross acreage of defoliation in Montana and northern Idaho approximated 3½ million acres and in southern Idaho two-thirds of a million acres. This acreage is exclusive of the 1-1/3 million acres sprayed by aircraft during the 1956 season.

SPRUCE BUDWORM

Choristoneura fumiferana (Clem.)

While there have been budworm outbreaks in these areas in years past there is no previous record of such extensive defoliation. The beginnings of the present epidemic were noted between 1945 and 1948 in the central part of Montana, and a few years later it became serious in Idaho. It appears that control efforts will have to continue until infestations have taken a downward trend.

DOUGLAS-FIR TUSSOCK MOTH

Hemerocampa pseudotsugata McD.

Infestations of the Douglas-fir tussock moth in northeastern Washington and northern Idaho in 1955 seemed serious enough to warrant control.

Later, appraisal of population trends based on a determination of the status of biological control factors made it possible to cancel plans for treatment. The survey in 1956 substantiated the appraisal and the infestations returned to endemic levels. Other surveys in 1956 revealed that about 10,000 acres of second-growth Douglas-fir in the Owyhee Mountains of Idaho were being defoliated by the tussock moth. This is the same area in which an outbreak developed in 1952 and subsided in 1953. Observations this past fall indicated a high degree of parasitization and it is hoped that this infestation will also subside without further serious defoliation. Several infestations were reported during 1956 in northern Idaho and one in western Montana, the latter being the first reported outbreak in that state. All these infestations subsided during midsummer, possibly from parasites or disease.

FIR NEEDLE MINER

Epinotia meritana Hein.

Damage to white fir on the Dixie National Forest and Bryce Canyon National Park from feeding of fir needle miner continues. An outbreak developed

in 1949 and damage to trees has increased each year. Considerable killing of limbs and death of some trees has resulted. The infestation consists of approximately 10,000 acres and there is no indication of a break in its severity. An added complication is caused by the general weakened condition of the stand which has proved favorable to increases in damage by the fir engraver beetle, Scolytus ventralis Les.

BLACKHEADED BUDWORM

Acleris variana (Fern.)

Several localized but very severe infestations have been detected in western hemlock and alpine fir in Glacier National Park and portions of the

Kaniksu and Kootenai National Forests in Idaho and Montana. The damage is thought to be the work of the blackheaded budworm. The damage covers

approximately 18,000 acres. Additional defoliation on 19,200 acres was reported in Yellowstone National Park during 1956, but ground examination revealed that most of the larvae had been killed when about half grown, presumably by a virus disease.

A sawfly, as yet undetermined beyond genus, was discovered in Yellowstone National Park during 1955 defoliating 5,200 acres of lodgepole pine. During 1956 a decrease to 1,300 acres was recorded, the reduction being attributed to heavy larval mortality from a virus disease.

UNKNOWN SAWFLY

Neodiprion sp.

Extensive defoliation of western larch has occurred in western Montana, northern Idaho, and northeastern Washington. Surveys and collections during 1956 revealed that there are at least four insects involved: the larch budmoth, Zeiraphera griseana (Hbn.), a looper, Semiothisa sexmaculata (Back.), and two or more species of undetermined sawflies. The total infested area approximates 500,000 acres. The damage picture is still further complicated by the presence of a larch needle-cast fungus, Hypodermella sp.

LARCH DEFOLIATORS

Defoliation by the Great Basin tent caterpillar in aspen areas of Utah increased sharply over that noted in 1955. Heretofore, the importance of this insect has been generally minimized. The increased importance of aspen in the area might increase the significance of damage by this species.

GREAT BASIN TENT CATERPILLAR

Malacosoma fragilis Stretch

## SUCKING INSECTS

### SPRUCE MEALYBUG

(Puto sp.)

A mealybug on Engelmann spruce has been active for some years in high spruce country of the Fishlake and Dixie National Forests in southern Utah. It is affecting all ages of spruce from reproduction to mature trees on about 60,000 acres. The mealybug feeds on both foliage and terminal twigs and continued feeding has resulted in death of some reproduction and serious limb killing on mature trees. Older dead trees in stands may have been killed by the mealybug, but it is difficult to determine this with certainty.

### BLACK LEAF PINE SCALE

Nuculaspis californica (Coleman)

An infestation of black leaf pine scale caused serious damage to ponderosa pine in the Spokane, Washington area. The epidemic was reduced to low level by freezing temperatures in 1950. Since that time the trend has been upward and the insect has now reached epidemic proportions in some of the areas.